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Var och Vad (Where and What)

Stefan Alenius

Where and *what* are processed by different portions of our brains. *Where* finds limits, edges and corners, while *what* deciphers the meaning of the clusters that they make.

A geometrical pattern may be interpreted in a variety of ways (fig. 1) and the preconceived image of, for instance, a camel can be represented by disparate forms (fig. 2). As my eyes move across the images, marks of varied tones combine themselves into forms, which remind me of something. I interpret these forms as “camels.”

Where and *what* are different, but in our minds they cooperate to find order and patterns within the otherwise chaotic signals of our world. The brain alternates between *where* and *what* to find relevant order in our environment, separating various events in order to effectively coordinate our bodies within our surroundings. This process—lets call it the “search-spiral”—is a kind of guessing that allows us to be efficient in our everyday life. This search-spiral is constantly at work within our subconscious, maintaining continuous contact with our surroundings. Therefore we say, we “are” in the room.

The search-spiral’s activity enables us to walk without falling. It is also what makes our interaction with a painting exciting. The search-spiral is always prepared to search for order at differing levels. The brain *wants* to find patterns.

The new information collected by the brain from the outside world is compared with memorized and previous experience. When a pattern appears that reminds us of something already stored in our memory, the brain guesses immediately (without entering into a learning process) that it is a similar thing. If this guess is not contested, the “spiral” moves on to the next search.

Curiously searching, the spiral is the process by which we find patterns in our world. The search-spiral is the reason for advancements in science and movements in art. It also addresses the spirit of architecture.

The brain finds different phenomena in its quest for patterns. Some are completely ordered and some are entirely lacking order. That which is too ordered does not stimulate us; the brain interprets all of the cues immediately and wants to proceed. Similarly, we

abandon that which is too disordered due to a lack of comprehensibility. However, the truly interesting phenomena are those that contain both order and disorder; meaning events with connections, structure, or patterns to be discovered. These phenomena are labeled complex—they have complexity!

A complex phenomenon can offer your mind a richer order to be discovered, one that is worthy of investigation. The more complex the phenomenon, the longer it is capable of “feeding” the search-spiral with new orders, thus providing a greater depth of interpretation. Architecture should be capable of enduring re-occurring experiences. Architecture should be complex!

What does complexity look like? In a work by M. C. Escher (fig. 3) we immediately find the simplest orders within the image. Reoccurring fields of gray are collected within a dark frame. Dark fields are separated from light fields. Soon these rough geometries become clarified. *Where* is defined. We find the abstract forms look like something—*what*—yes, birds! But there are two kinds of birds, (*what*). The white reoccurs at even intervals, (*where*).

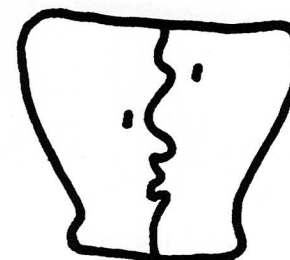


fig. 1. Fixation image.



fig.2. Camels?

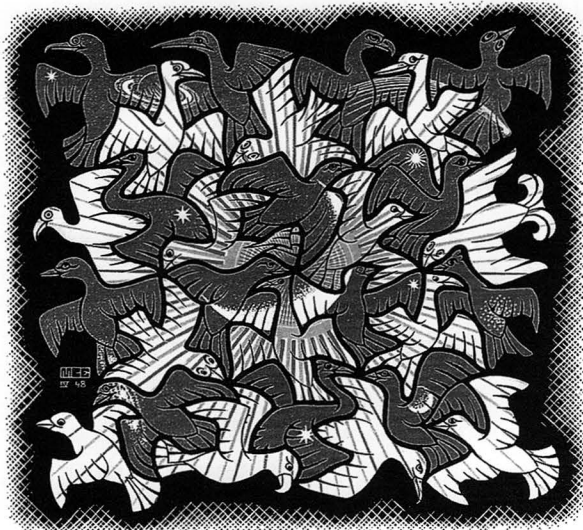


fig. 3. M. C. Escher. *Sun and Moon*.



fig. 4. Kasuo Shinohara, *Centennial Hall, Tokyo*. Photo Courtesy of Vladimir Krstic.

Suddenly, what was a black background instead becomes dark birds, (*where* and *what*)! How is this possible? The figure and ground are perfectly distinguishable, (*where*).

In this manner the brain continues to process both *where* and *what*. Soon one will ask if it is the same white bird, but in different flying positions, and also if it is one in the same dark bird. How then is time explained in the image? Or is it a matter of a single momentary image, a flock of dark and a flock of light birds? How then is time explained?

The brain continues to search, encouraged by finding so many connections, so much order. Shortly, you notice that no bird is alike, but that all the white birds seem to be washed by a light. The light appears to shine from the center as if it were the sun. What about the dark birds? They seem to have similar marks on their bodies. White spots—stars—focus their light toward the center where there is a moon. The birds of the night and the birds of the day! Now, how is time depicted? The spiral's search reaches further into the different layers of order within the image. Let's say the night birds "collect" their darkness from the darkest outer edges of the image. From where do the lighter birds collect the light? Where does the picture end? Does it have an end?

Escher's image is an example of a complex phenomenon—it has a depth in interpretation. It is also characterized by a relatively simple geometry—it is not difficult to perceive the formations. Too many and complicated geometric forms probably would not have provided the same number of associations. Conversely, had the formations been too sparse or simple, the opportunities for interpretation would have been exhausted almost immediately.

Now exchange the Escher image for architecture. Upon examining the work of Ledoux, Asplund, Kahn, or Le

Corbusier it is apparent that complexity and deeper logic exist in a similar fashion. Or why not try the *where/what* spiral on Shinohara's Centennial Hall in Tokyo (fig. 4). Why does it seem to be a conglomeration of parts from a collection of surrounding urban forms while simultaneously standing as a self-dependent entity. Why does one want to determine its true character? Is it only a building and if so, for what? Is this an "urban vessel" moving through time in which we find a peculiar apprehension about up and down.

Architecture plays a role in defining the expression of an epoch and constitutes a built image of the present. The dominant ideals of a particular time make their mark upon humankind, who in turn require and shape the buildings of that time. From this point of view it can be said that a structural relationship exists between today and the Baroque period.

A naive directness existed in Renaissance architecture. Mass was formed by individual units that were placed next to each other to express a static balance. Collections of buildings became well formed objects. As ideas of reawakening antiquity developed, architecture instead became rhythmically formed currents of rooms. As we know, the Baroque is primarily concerned with the shaping of rooms. Between the Renaissance and Baroque, Mannerism existed with its deformed interaction between object and room.

Modernism placed its individual silhouettes next to one another, engulfed by the liberated in-between spaces. In buildings as well as in entire cities, individual elements were grouped together to form larger units. This object-oriented period was succeeded by the Post-Modernist interest in the room, which did not fear contradictory meetings between object and room. With this new type of silhouette, the ability to renew both the building and the city was examined.



fig. 5. F. Borromini. S. Carlo alle Quattro Fontane. 1667.

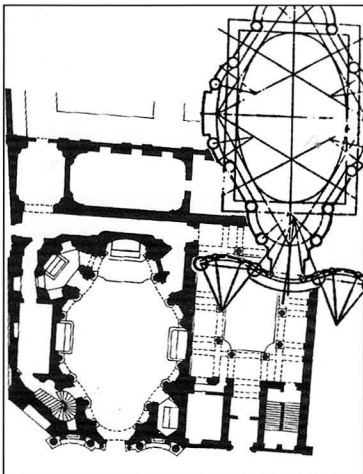


fig. 6. Geometric plan analysis.

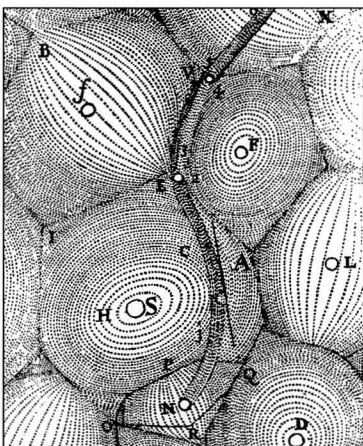


fig. 7. An illustration from "Principles of Philosophy," by Descartes.

If this parallelism in the comparison (object-object/room-room) is correct, we could now encounter a modern version of the Baroque idea of space, an idea where architecture and urban design in many ways present "the room's harmonic current." How does this appear today and how did it appear in the Baroque period?

Baroque buildings belong to the mechanical idea of the universe. The graphical, mathematical methods of the Baroque period described laws within nature. Something similar was contained within the formal language of architecture during this period (figs. 5,6). In the drawing, basic geometrical forms were laid within and juxtaposed to one another so that they created a field of influence. Soft, rhythmically pulsating lines could be freed to form the borderline between matter and room.

In Baroque architecture, the pulsating envelope controls and shapes the flow of rooms. That which remains in between the silhouettes of the inner and outer space can be seen as an arbitrary mass, in which the necessary technical building structure is buried. In the Baroque, our senses only perceive this rhythmic flow of rooms. We can only perceive the powerful masses in which the spaces have been carved as undulating surfaces. The room is everything!

Baroque science reveals a similar formal language. In the mechanically stable space of the cosmos, planets move in oval orbits. In the imagination of the philosopher, undulating lines from electrical fields are released due to the interaction of the smallest particles (fig. 7).

Three revolutions in 20th century physics have changed how we view our world, and called into question its inherent stability. First, in the relativity of space-time and the way it reveals itself in the very large scale. Secondly, in the aspects of quantum physics investigating the exceptionally small, dealing with

uncertainty and probability. Finally the chaos theory, which revealed the inherent chaos within "everything." How are these things revealed in architecture and urban development today?

At the level of the house, Venturi introduced the post-modernist break from modernistic formal language. The European City Movement did the same at the scale of the city. The pure forms of mature modernism began to collide in a shearing and defragmented fashion. Our preconceived ideas of given forms were emptied of content in the continued defragmentation of deconstructivism. When viewed from afar, the city appears to be made of "piles" of randomly collaged formal leftovers (fig. 8).

The science of chaos explains nature in precisely the same way. No understanding or overriding relations between small pieces can be determined at different levels of investigation. The battlefield of reconsideration leaves the abstract form in chaos.

The search-spiral cannot grasp these types of formal relationships. No order is found if one looks at water so closely so as to attempt to determine relationships between individual molecules. Nature often behaves in the same way when we view it from an "absent minded" distance. The totally disordered, "the chaotic," is boring if not unbearable!

The deconstructivist city landscape can be seen as a deeper insight into the chaos existing in nature. The seemingly lost faith in the ability of physical planning casts a shadow onto this landscape. At the same time, a striking beauty exists in many of the individual projects within this battlefield (fig. 11).

Can this be seen as a moment within ongoing change? Look at figure 8, and consider what the next figure could be. One that possibly represents a space of

today or tomorrow. Let's continue a couple of more steps in the defragmentation process with our series of images. The individual forms of edges and corners will then be ground into a sort of tenacious mass where matter and space converge.

Imagine that the space is "water-like" and let it flow into the landscape of figure 8. The water will then become a turbulent vortex, rippling and whirling between that which is inside and that which is outside of the elements that this built landscape consist of. But in the next figure, the common quality of the image flows more evenly. The matter, with its inherent forces, and the in-between space seem to dissolve into each other creating a unified field of influence. Substantial individual spaces, unforeseen and sudden in form, can also appear due to small deformations or extrusions in the flow. The edges of the silhouettes define inside and outside, rather than the matter between these edges.

The "soap bubble atmosphere" of the display case image in figure 9 attempts to replicate the essence of this analogy. When we understand this analogy, we are close to understanding the attraction that building form has toward transparency of materials and unrecognizability in form, evident in today's cutting edge architecture (fig. 10).

We can now remind ourselves of some of the theories in contemporary physics. Even a vacuum is not completely empty, it contains measurable amounts of energy. Light can materialize out of what seems to be nothing. With the total surrounding gravity everything is influenced by everything. Stars are created, and so on...

In the Baroque, this attraction between all things can be observed in paintings by Rembrandt. In this case, light seems to be that which displays this most profound quality (fig. 12). The rhythmic flow of space is present even as the individual bodies and the in-between

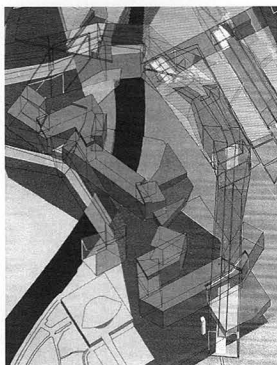


fig. 8. Andrew Zago.
Federal Capital, Berlin.

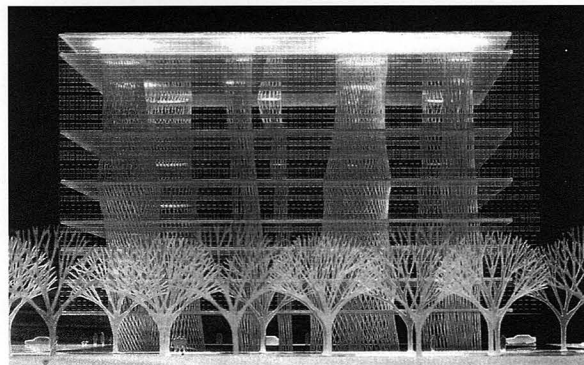


fig. 10. Toyo Ito. *Médiatheque Project in Sendai.*



fig. 12. Rembrandt.



fig. 9. "Showcase landscape."

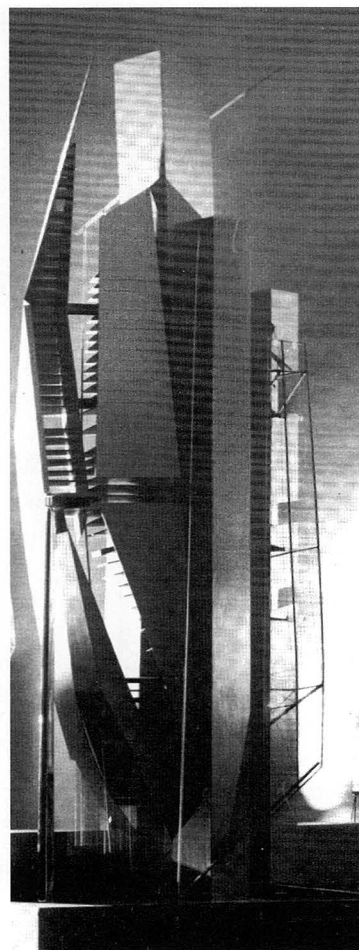


fig. 11. Coop Himmelbau. *Skyline for Hamburg.*

spaces are illuminated. They are the bearers of light, or in fact, even made of light. The silhouettes are somehow penetrated by the same light that is contained on the surfaces and within the voids. It is as if everything is made from the same mass of light but with shifting rhythmic densities. Isn't Rembrandt, with his artistic penetrative investigation of light, mass, and space, very close to the "soap bubble image" that we just discussed? Here we find logical depth, depth of interpretation, and actuality.

The transition from the theory of chaos to the research of complexity points to the chaotic qualities of micro-conditions within nature. At the same time, it interprets the complex totality in simple and easily defined forms. One could know all the individual parts of a larger whole without being able to define the outcome as a result of the inter-relationships within this whole (fig. 13). It is within this realm that our senses and the search-spiral act. Here the patterns are to be found!

Let us now think about something similar regarding the individual room shapes within the image of the "soap bubble flow." The forms of these

"total systems" are derived from an intuitive depth of fantasy. The forms are "pure," although they cannot be calculated and are thereby unforeseen. At the same time, they are all products of inherently complex relationships of demand on function, attention, social connection, etc.

From this we can discern a useful approach to the primary practical tasks of architecture. Let us confess the ability of artistic intuition to visualize the unforeseen totality in our struggle to unite many individually motivated, but seemingly incompatible programmatic demands. One could say that the good form is the relatively simple form of a complex phenomenon.

"Form follows Function(s)" still applies, but how the connection is perceived is something we will not know until the form is brought to life. It is the outcome of the whole that is unforeseeable. This does not mean that the amount of effort one puts into merging all of the pieces during the design process does not matter. The rigid belief of modernism regarding the reversal of the formula—so that function also follows form—is now obsolete. A building can end up

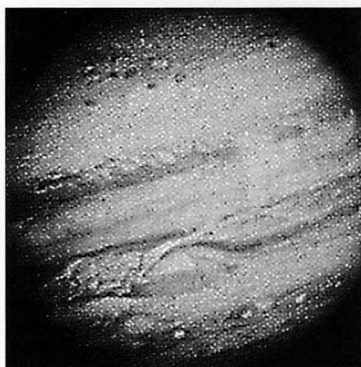


fig. 13. *The eye of Jupiter.*

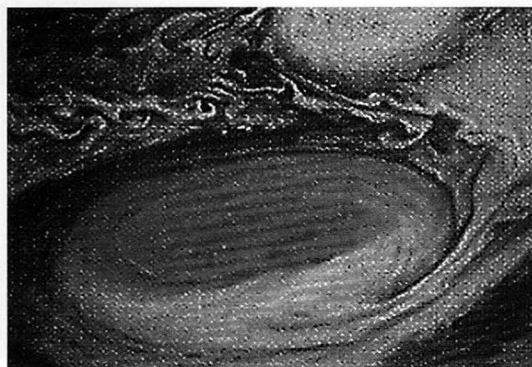


fig. 14. *A. E. Hjorth, a living room.*

looking like anything, and even then we do not know if it will be used in the way in which it was intended.

A building that embodies complexity—meaning depth of interpretation—has a broad openness toward an unforeseeable future change in use. Insight into an order within chaos is applicable in practice—it gives architecture durability!

This is an interpretation of a change in our perception of space. We can now argue about why expressions in time appear. Why is there a need for a building to be “of its own time”?

The reason, of course, is the activity of the search-spiral within each of us, and the way in which it forms a collected impression at a social level. The collected experiences of you and I play a crucial role in the *where/what* spiral’s efforts to understand the surrounding world on all levels, and allow the body to coexist with it. Large amounts of this experience are recalled from, or created as memories in contemporary thoughts and lifestyles, thereby creating the necessity for an expression in time.

However, large amounts of the memory

experience that the search-spiral’s activity is in need of is not collected in the contemporary world! We carry within us inherited ancient DNA that has been collected over a very long period of time. This evolutionary memory influences us in how we express ourselves in architecture and the building of cities. Maybe this is why several famous pieces from architectural history constantly seem to reappear time after time as if in a “new light.” The Pyramids, the Parthenon, the Pantheon, the Gothic cathedral, the skyscraper, the ancient Egyptian river temple, Hagia Sophia...are these buildings that only render their own time. Or can we perhaps claim that these buildings sink beneath the surface of time and obtain a deeper meaning that holds true to all of humanity?

There is something peculiar in how humans create a dwelling with a specific building method, choice of material, particular dimensions, etc. In this peculiar act, can we find connections with the senses locked within DNA—in how the human reads a space/room? If so, has this left traces within these particular buildings?

The Swedish architect Harald Thafvelin offers inspiration and ideas in his thoughts regarding the human reading of a room. He explained it in the following way:

1. The continuous space that we perceive being within is created through a composition of fragments. Some more important settings are read in greater detail by the brain and through time and movement they are assembled into a continuum within our perception.
2. These individual settings are separated into different entities. These entities are registered with the senses set as if there were only a limited amount of readings available.
3. Reading these entities has a certain order beginning at the bottom (world of the feet), through the middle (world of the bellybutton), and further up (world of the head). Initially our focus begins at the right, then the middle and at last to the left side of the setting.

Obviously, this explanation is unjustly short. In reality, his theory is suggestive, elaborate, and “complex.” But it gives us a premonition of the idea that we are in some ways preset in our monitoring of the space. One could say that the

brain does not only search for order in the signals coming from the outer world, but it searches within pre-selected fragments of settings. Here, the brain monitors via a set order with a desire to find certain relationships more than others. If the outer world corresponds with the relationships that we desire, the foundation of the setting is seen as positive. If the opposite occurs then our reaction is negative and the setting is not in harmony with our desires. You can test one part of Thafvelin’s theory by comparing the setting in figure 14 with your feelings about its mirrored image in figure 15.

Registering and evaluating are in this way joined. The continuous space that we experience being within can then be described as an ever changing collection process in which *where* and *what* are braided together. There are no spaces with only locations, *what* is inseparably present within this continuum! (In this case, the transparency in our earlier discussion about future spatial entities will not only speak of glass.)

With this train of thought one can very well suppose that certain spatial archetypes are a part of the brain’s

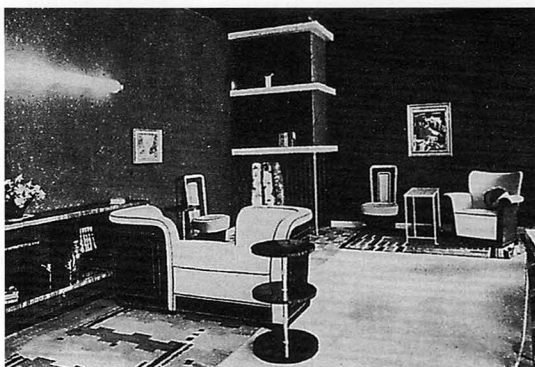


fig. 15. Compare with figure 14.



fig. 16. Tadao Ando. Soseikan house. Photo Courtesy of Vladimir Krstic.

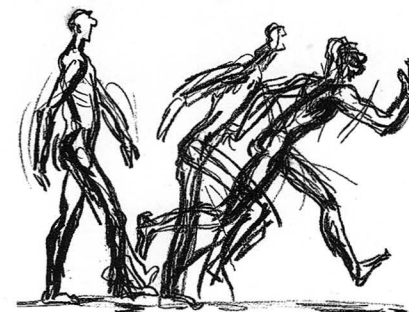


fig. 17. Walking—Running.

wish list. In reality, if we encounter these spaces, or spaces that are very similar, one could foresee a harmonic situation for the “reader,” where the brain does not have to struggle to understand the space. Energy can instead be directed toward other things, possibly a further investigation of the next setting, resulting in an eventual depth of interpretation.

Among the excerpts of architecture we should find examples that come close to this harmonious position of repose (fig. 16). An interesting parallel to this thought may be drawn from perceptual psychology’s research on the evolutionary frugality of the human mind. How does the brain manage to keep in continuous contact with everything in our surroundings while one is moving? In order to keep from falling, an incomprehensible amount of information must be processed by our minds, while also sending commands to the body where assimilation is crucial. The human body has developed two types of movement, *walking* and *running*. Specific compositions of muscles, bones, and joints allow the body to act with a minimal dependence on the mind. The body is close to operating by itself.

These types of movement (fig. 17) are in this sense a kind of position of repose that enables one to use the brain to think about other things. However, the change from one form of movement to another does not allow this freedom. Is there something similar in our reading of space? Think about this the next time you take a walk in a forest. Why do some spaces in the landscape appear to be pleasing, sympathetic, and secure? Can this have anything to do with why the basic pattern of the Pantheon reoccurs in architectural history? And why can the simple physical form of the original in Rome (fig. 18) be identified as a form of a complex phenomena with close to an eternal depth of interpretation?

It is interesting from this standpoint that Vincent Scully sees humankind in the Minoan culture as explaining the world through the meeting between herself and the personified entities of the landscapes. She walks “the surface of the earth and looks at the face of this entity.” This in comparison to the parallel culture of Stonehenge, where mankind is standing in the center of the earth embraced by the cupola of the sky, with

a disappearing ground in every direction (compare with figure 18). Another position connecting to this idea is that of humankind as a being on the edge, with nose facing the open landscape and back toward the dense forest.

I truly believe that this position of repose within architecture exists, and it is the goal of architecture to approach this position. The keyword, is of course, “approach.” The balancing act of the “simple,” between precise form and obscure imagery is, and will remain, art’s opening toward the depth of complexity. This is how meaning can occur in architecture. It is only in this way that the *where/what* spiral can penetrate deep into the depth of desire.

What does Shinohara’s building really mean?



fig. 18. The Pantheon.